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NEWS	2	AUG 10	Time limit for inactive STN sessions doubles to 40 minutes
NEWS	3	AUG 18	COMPENDEX indexing changed for the Corporate Source (CS) field
NEWS	4	AUG 24	ENCOMPLIT/ENCOMPLIT2 reloaded and enhanced
NEWS	5	AUG 24	CA/CAPLUS enhanced with legal status information for U.S. patents
NEWS	6	SEP 09	50 Millionth Unique Chemical Substance Recorded in CAS REGISTRY
NEWS	7	SEP 11	WPIDS, WPINDEX, and WPIX now include Japanese FTERM thesaurus
NEWS	8	OCT 21	Derwent World Patents Index Coverage of Indian and Taiwanese Content Expanded
NEWS	9	OCT 21	Derwent World Patents Index enhanced with human translated claims for Chinese Applications and Utility Models
NEWS	10	NOV 23	Addition of SCAN format to selected STN databases
NEWS	11	NOV 23	Annual Reload of IFI Databases
NEWS	12	DEC 01	FRFULL Content and Search Enhancements
NEWS	13	DEC 01	DGENE, USGENE, and PCTGEN: new percent identity feature for sorting BLAST answer sets
NEWS	14	DEC 02	Derwent World Patent Index: Japanese FI-TERM thesaurus added
NEWS	15	DEC 02	PCTGEN enhanced with patent family and legal status display data from INPADOCDB
NEWS	16	DEC 02	USGENE: Enhanced coverage of bibliographic and sequence information
NEWS	17	DEC 21	New Indicator Identifies Multiple Basic Patent Records Containing Equivalent Chemical Indexing in CA/CAPLUS
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=> S (aryldialkylphosphatase or a-esterase or aryltriphosphatase or (paraaxon hydrolase) or paraoxonase or phosphotriesterase or oph or (organophosphorus hydrolase) or (diisopropyl-fluorophosphatase) or carboxylase or (parathion hydrolase) or (organophosphate hydrolase)) (4A) activity

9 FILES SEARCHED...

L1 17055 (ARYLDIALKYLPHOSPHATASE OR A-ESTERASE OR ARYLTRIPHOSPHATASE OR (PARAOXON HYDROLASE) OR PARAOXONASE OR PHOSPHOTRIESTERASE OR OPH OR (ORGANOPHOSPHORUS HYDROLASE) OR (DIISOPROPYL-FLUOROPHOSPHATASE) OR CARBOXYLASE OR (PARATHION HYDROLASE) OR (ORGANOPHOSPHATE HYDROLASE)) (4A) ACTIVITY

=> S Hydrolase (4A) activity
L2 18826 HYDROLASE (4A) ACTIVITY

=> S L1 (P) humidity
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L7 (P) HUMIDITY'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L9 (P) HUMIDITY'
L3 24 L1 (P) HUMIDITY

=> S (aryldialkylphosphatase or a-esterase or aryltriphosphatase or (paraoxon hydrolase) or paraoxonase or phosphotriesterase or oph or (organophosphorus hydrolase) or (diisopropyl-fluorophosphatase) or carboxylase or (parathion hydrolase) or (organophosphate hydrolase)) (4A) humidity
L4 8 (ARYLDIALKYLPHOSPHATASE OR A-ESTERASE OR ARYLTRIPHOSPHATASE OR (PARAOXON HYDROLASE) OR PARAOXONASE OR PHOSPHOTRIESTERASE OR OPH OR (ORGANOPHOSPHORUS HYDROLASE) OR (DIISOPROPYL-FLUOROPHOSPHATASE) OR CARBOXYLASE OR (PARATHION HYDROLASE) OR (ORGANOPHOSPHATE HYDROLASE)) (4A) HUMIDITY

=> S (aryldialkylphosphatase or a-esterase or aryltriphosphatase or (paraoxon hydrolase) or paraoxonase or phosphotriesterase or oph or (organophosphorus hydrolase) or (diisopropyl-fluorophosphatase) or carboxylase or (parathion hydrolase) or (organophosphate hydrolase)) (P) humidity
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED ' (P) HUMIDITY'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED ' (P) HUMIDITY'
L5 163 (ARYLDIALKYLPHOSPHATASE OR A-ESTERASE OR ARYLTRIPHOSPHATASE OR (PARAOXON HYDROLASE) OR PARAOXONASE OR PHOSPHOTRIESTERASE OR OPH OR (ORGANOPHOSPHORUS HYDROLASE) OR (DIISOPROPYL-FLUOROPHOSPHATASE) OR CARBOXYLASE OR (PARATHION HYDROLASE) OR (ORGANOPHOSPHATE HYDROLASE)) (P) HUMIDITY

=> S (aryldialkylphosphatase or a-esterase or aryltriphosphatase or (paraoxon hydrolase) or paraoxonase or phosphotriesterase or oph or (organophosphorus hydrolase) or (diisopropyl-fluorophosphatase) or carboxylase or (parathion hydrolase) or (organophosphate hydrolase)) (S) humidity
L6 59 (ARYLDIALKYLPHOSPHATASE OR A-ESTERASE OR ARYLTRIPHOSPHATASE OR (PARAOXON HYDROLASE) OR PARAOXONASE OR PHOSPHOTRIESTERASE OR OPH OR (ORGANOPHOSPHORUS HYDROLASE) OR (DIISOPROPYL-FLUOROPHOSPHATASE) OR CARBOXYLASE OR (PARATHION HYDROLASE) OR (ORGANOPHOSPHATE HYDROLASE)) (S) HUMIDITY

=> s l1 and l6
L7 11 L1 AND L6

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L8 ANSWER 1 OF 9 SCISEARCH COPYRIGHT (c) 2010 The Thomson Corporation on
STN DUPLICATE 1
AN 1992:136042 SCISEARCH
GA The Genuine Article (R) Number: HE704

TI PHYSIOLOGICAL AND ANATOMICAL FEATURES OF 2 TRITICUM-DICOCCOIDES WHEAT
 ACCESSIONS DIFFERING IN PHOTOSYNTHETIC RATE
 AU KEBEDE H (Reprint); JOHNSON R C; CARVER B F; FERRIS D M
 CS OKLAHOMA STATE UNIV, DEPT AGRON, STILLWATER, OK 74078; WASHINGTON STATE
 UNIV, USDA ARS, PLANT INTRODUCT STN, PULLMAN, WA 99164
 CYA USA
 SO CROP SCIENCE, (JAN-FEB 1992) Vol. 32, No. 1, pp. 138-143.
 ISSN: 0011-183X.
 PB CROP SCIENCE SOC AMER, 677 S SEGOE ROAD, MADISON, WI 53711.
 DT Article; Journal
 FS AGRI
 LA English
 REC Reference Count: 25
 ED Entered STN: 1994
 Last Updated on STN: 1994

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The wild tetraploid species *Triticum dicoccoides* (L.) Korn has many traits that may be useful to hexaploid wheat (*T. aestivum* L.). Two accessions of this species (PI 428042 and PI 428109) were found to have similar-sized leaves, but they differ by almost-equal-to 30% in net CO₂ assimilation per unit leaf area (A). We sought to identify physiological and anatomical factors that would explain the difference in photosynthetic rate between the two accessions, and between these accessions and the hexaploid wheat 'TAM W-101'. Photosynthetic responses to CO₂ (at 20 and 210 mL O₂ L⁻¹ air), light, and humidity, and also ribulose biphosphate carboxylase (rubisco) activity and sucrose concentration, were determined on new fully expanded leaves of each genotype. Anatomical features associated with photosynthesis were determined using light and electron microscopy. PI 428109 showed consistently higher A than PI 428042 at varying levels of CO₂, light, and humidity. Higher rubisco activity was observed in leaves of PI 428109 than PI 428042, as also indicated by a greater slope of the initial linear portion of the A vs. c(i) (intercellular leaf CO₂ concentration) curve. A higher sucrose concentration was observed in the leaves of PI 428042 than in PI 428109. No anatomical differences were detected between the two *T. dicoccoides* accessions. Therefore, photosynthetic differences between the two *T. dicoccoides* accessions were biochemically, and not anatomically, driven.

L8 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 1991:161016 HCAPLUS
 DN 114:161016
 OREF 114:27151a,27154a

TI Decreased ribulose-1,5-bisphosphate carboxylase-oxygenase in transgenic tobacco transformed with antisense *rbcS*. II. Flux-control coefficients for photosynthesis in varying light, carbon dioxide, and air humidity

AU Stitt, M.; Quick, W. P.; Schurr, U.; Schulze, E. D.; Rodermeil, S. R.; Bogorad, L.

CS Univ. Bayreuth, Bayreuth, W-8580, Germany

SO Planta (1991), 183(4), 555-66
 CODEN: PLANAB; ISSN: 0032-0935

DT Journal

LA English

AB Transgenic tobacco (*Nicotiana tabacum*) plants transformed with antisense *rbcS* to produce a series of plants with a progressive decrease in the amount of ribulose-1,5-bisphosphate carboxylase/oxygenase (Rubisco) have been used to investigate the contribution of Rubisco to the control of photosynthesis at different irradiance, CO₂ concns. and vapor-pressure deficits. Assimilation rates, transpiration, the internal CO₂ concentration

and

chlorophyll fluorescence were measured in each plant. The flux-control coefficient of Rubisco was estimated from the slope of the plot of Rubisco content vs. assimilation rate. The flux-control coefficient had a value of ≥ 0.8 in high irradiance, ($1050 \mu\text{mol m}^{-2} \text{s}^{-1}$), low-vapor pressure deficit (4 mbar) and ambient CO_2 ($350 \mu\text{bar}$). Control was marginal in enhanced CO_2 ($450 \mu\text{bar}$) or low light ($310 \mu\text{mol m}^{-2} \text{s}^{-1}$) and was also decreased at high vapor-pressure deficit (17 mbar). No control was exerted in 5% CO_2 . The flux-control coeffs. of Rubisco were compared with the fractional demand placed on the calculated available Rubisco capacity. Only a marginal control on photosynthetic flux is exerted by Rubisco until over 50% of the available capacity is being used. Control increases as utilization rises to 80%, and approaches unity (i.e. strict limitation) when more than 80% of the available capacity is being used. In low light plants with reduced Rubisco have very high energy-dependent quenching of chlorophyll fluorescence (qE) and a decreased apparent quantum yield. It is argued that Rubisco still exerts marginal control in these conditions because decreased Rubisco leads to increased thylakoid energization and high-energy dependent dissipation of light energy, and lower light-harvesting efficiency. The flux-control coefficient of stomata for photosynthesis was calculated from the flux-control coefficient of Rubisco and the internal CO_2 concentration, by applying the connectivity theorem. Control by the stomata varies between zero and about 0.25. It is increased by increased irradiance, decreased CO_2 or decreased vapor-pressure deficit. Photosynthetic oscillations in saturating irradiance and CO_2 are suppressed in decreased-activity transformants before the steady-state rate of photosynthesis is affected. This provides of excess Rubisco. Comparison of the flux-control coeffs. of Rubisco with mechanistic models of photosynthesis provides direct support for the reliability of these models in conditions where Rubisco has a flux-control coefficient approach unity (i.e. limits photosynthesis), but also indicates that these models are less useful in conditions where control is shared between Rubisco and other components of the photosynthetic apparatus

OSC.G 62 THERE ARE 62 CAPLUS RECORDS THAT CITE THIS RECORD (62 CITINGS)

L8 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1991:244427 HCAPLUS

DN 114:244427

OREF 114:41185a,41188a

TI Does air relative humidity during growth condition photosynthetic characteristics of coffee leaf?

AU Nunes, Maria A.; Rijo, Paula S.

CS Cent. Estud. Prod. Tecnol. Agric., Lisbon, Port.

SO Curr. Res. Photosynth., Proc. Int. Conf. Photosynth., 8th (1990), Meeting Date 1989, Volume 4, 721-3. Editor(s): Baltscheffsky, Margareta.

Publisher: Kluwer, Dordrecht, Neth.

CODEN: 57BCAN

DT Conference

LA English

AB Coffee plants (*Coffea arabica* cv. CATURRA) about two years old were placed in a growth room with artificial irradiance ($150 \mu\text{mol m}^{-2} \text{s}^{-1}$) and low (50%) relative air humidity or in a greenhouse provided with natural light of similar irradiance but high relative air humidity (80%). Leaves from the greenhouse were less sclerophyllous and exhibited a photosynthetic rate 4 times higher and also higher conductances under the same irradiance. The initial slope of the relationship between net photosynthesis and internal CO_2 concentration was higher in leaves from the greenhouse, suggesting higher carboxylation efficiency. Accordingly, leaves from the greenhouse had higher contents of chlorophyll (+26% per

unit area) protein (+20% per unit area) and ribulose diphosphate carboxylase activity (3.5-fold per unit area). It is suggested that photosynthetic performance of coffee leaves is reduced by air humidity less than 50% during development.

L8 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1990:588324 HCAPLUS
DN 113:188324
OREF 113:31799a,31802a
TI Effect of temperature and humidity during growth on yield and photosynthetic characteristics of triticale
AU Chugunova, N. G.; Tsyuryupa, S. N.; Karpilova, I. F.; Romanova, A. K.
CS Inst. Soil Sci. Photosynth., Pushchino, USSR
SO Fiziologiya Rastenii (Moscow) (1990), 37(4), 659-67
CODEN: FZRSBV; ISSN: 0015-3303
DT Journal
LA Russian
AB Growth and production relationships to photosynthetic and respiration rates and ribulose biphosphate carboxylase/oxygenase (RBPC/O) activity were studied in a hexaploid type of amphidiploid Triticale, cv. Nemiga-2, grown at a day/night temperature of 28°/21° and 45% humidity (warm treatment), or at 22°/17° and 75% humidity (moderate treatment). In the moderate treatment, as compared with the warm one, there were delays in the onset of successive ontogenetic phases and in growth. The root/shoot dry weight ratio was higher in the moderate treatment. Grain yields were equal in both treatments. Negligible differences between the treatments were in rates of photosynthetic CO₂ exchange, in rate per unit of leaf surface, and in the carboxylase/oxygenase activity ratio of RBPC/O. However, both the activities and soluble protein (consisting mostly of RBPC/O) per unit leaf surface were higher in the moderate treatment. Appreciable differences between the treatments in total biomass accumulation were mainly due to longer life span and greater dimensions of leaves in the moderate treatment.

L8 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
AN 1990:470926 BIOSIS
DN PREV199090110346; BA90:110346
TI STUDIES ON THE CONTROLLED ATMOSPHERE CA STORAGE OF FRUITS AND VEGETABLES
X. EFFECT OF CARBON DIOXIDE IN STORAGE ATMOSPHERE ON THE METABOLISM OF ORGANIC ACIDS IN SATSUMA MANDARIN CITRUS-UNSHIU MARC FRUITS.
AU TANAKA Y [Reprint author]
CS AICHI-KEN AGRIC RES CENTER, NAGAKUTE, AICHI, JPN
SO Research Bulletin of the Aichi-ken Agricultural Research Center, (1989)
No. 21, pp. 253-262.
CODEN: ANKHDV. ISSN: 0388-7995.
DT Article
FS BA
LA JAPANESE
ED Entered STN: 25 Oct 1990
Last Updated on STN: 25 Oct 1990
AB These studies were carried out to clarify the mechanism of synthesis and accumulation of organic acids in Satsuma mandarin, by measuring enzymatic activities relating to organic acid synthesis and the amount of ¹⁴C₂ fixation and ¹⁴C in the components of the fruit during the growing and storing stage. The results obtained are as follows: 1. Enzymatic activities in skin and flesh of fruits were measured in each stage. The activities of isocitrate dehydrogenase, phosphoenolpyruvate carboxylase, citrate synthetase were higher in the juice of flesh vesicle tissue than the juice of skin's, while the activity of aconitase was almost same in both tissues. 2. The activity of citrate synthetase was observed similar

degree in both fraction of soluble and mitochondria those separated by centrifuging method, while the activity of malate dehydrogenase was higher in the soluble fraction and the activity of NAD dependent isocitrate dehydrogenase was higher in the mitochondrial fraction. 3. The change of enzymatic activities were measured with the fruits during growing and storing stage. The activity of NADP dependent isocitrate dehydrogenase was scarcely observed at early stage (July) of fruit growth, however it increased in accordance with the fruit development, and these tendency maintained during the first one month of storage at 0°C. The activity of malate dehydrogenase kept higher level at early stage, subsequently decreased to the lowest level at October with the development of the fruits. Thereafter increased again and reached to the peak one month after in storage. The activity of citrate synthetase increased throughout the stages of development and the first one month of storage. 4. The enzymatic activities were measured with the fruits which were mechanically shocked or stored in various circumstances. The activity of phosphoenolpyruvate carboxylase in the fruits shocked or stored at high temperature (> 30°C) and high relative humidity (100%) was lower as compared with those in the non-shocked fruits or the fruits stored at 3°C with humidity of 85%. The activity of isocitrate dehydrogenase was higher both in skin and flesh of fruits stored in high humidity than those in low humidity, and was higher in the skin of fruits stored in high concentration of CO₂ in atmosphere than the ones stored low CO₂ condition. While it was lower in the flesh of shocked fruits than non-shocked ones. 5. Fruits mechanically shocked or stored in various circumstances were laid in the dark room filled with atmosphere including 14CO₂ for 24 hours. After that the amount of 14C incorporated into soluble fraction fruits were measured. Total 14C activity in the flesh of fruits stored in high concentration of CO₂ or stored after shocked was lower than those stored in low CO₂ or non-shocked. 14C14 activities in components of fruit which were separated by ion-exchange resins were measured. The activities were lower in the fraction of amino acids of fruit stored in high concentration of CO₂ and in the fraction of organic acids in the fruit shocked than others.

L8 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 1985:451297 HCAPLUS
 DN 103:51297
 OREF 103:8219a,8222a
 TI Effect of physiological state of lupine seeds and their treatment with gibberellin and 6-benzylaminopurine on the activity of ribulose diphosphate carboxylase
 AU Rusinova, N. G.; Dubrovskii, N. G.; Likholat, T. V.; Doman, N. G.
 CS Inst. Biokhim. im. Bakha, Moscow, USSR
 SO Doklady Akademii Nauk SSSR (1985), 281(4), 1021-4 [Plant Physiol.]
 CODEN: DANKAS; ISSN: 0002-3264
 DT Journal
 LA Russian
 AB Soaking seed, aged for 2-4 days at 41° and 100% humidity, in 10 mg BAP/L or in 50 mg/L of gibberellins consisting mostly of gibberellin A3 partially restored germination and growth rate and the activity of ribulose diphosphate carboxylase in 10-day-old yellow lupine seedlings. The phytohormone treatments also restored the activity of endogenous gibberellins and cytokinins.

L8 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 1987:631337 HCAPLUS
 DN 107:231337
 OREF 107:37071a,37074a
 TI Treatment of lupine and triticale seeds with growth regulators and the

activity of ribulose biphosphate carboxylase from
leaves of seedlings

AU Rusinova, N. G.; Doman, N. G.; Kosogova, T. M.; Dubrovski, N. G.;
Likholat, T. V.
CS A. N. Bach Inst. Biochem., Moscow, USSR
SO Acta Universitatis Agriculturae, Facultas Agronomica (Brno) (1985), 33(3),
163-5
CODEN: AUAAB7; ISSN: 0524-7403
DT Journal
LA English
AB The level of endogenous phytohormones dropped in triticale and yellow
lupine (*Lupinus luteus*) seeds aged at 40° and 100% relative
humidity, and the activity of ribulose biphosphate
carboxylase and the content of soluble proteins in the leaves of
11-day seedlings grown from the seeds decreased by 150-500 and 20-40%,
resp. The neg. effects of seed aging can be removed by treatment of the
seeds with gibberellins, 6-BAP, and hydrel.
OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L8 ANSWER 8 OF 9 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
DUPLICATE 2
AN 1980:199360 BIOSIS
DN PREV198069074356; BA69:74356
TI THE ACTIVITY AND MALATE INHIBITION STIMULATION OF PHOSPHOENOL PYRUVATE
CARBOXYLASE IN CRASSULACEAN ACID METABOLISM PLANTS IN THEIR NATURAL
ENVIRONMENT.
AU VON WILLERT D J [Reprint author]; BRINCKMANN E; SCHEITLER B; THOMAS D A;
TREICHEL S
CS UNIV BAYREUTH, UNIVSITAETSTR 30, D-8580 BAYREUTH, W GER
SO Planta (Heidelberg), (1979) Vol. 147, No. 1, pp. 31-36.
CODEN: PLANAB. ISSN: 0032-0935.
DT Article
FS BA
LA ENGLISH
AB The effect of environmental conditions, temperature, relative
humidity and light, together with the regulation of PEPC
(phosphoenolpyruvate-carboxylase) activity by malate
and pH on CAM (crassulacean acid metabolism), was studied in members of
the Mesembryanthemaceae (*Aridaria* sp., *Psilocaulon*, *Prenia sladeniana*) in
their natural environment, the southern Namib desert (South Africa).
During a 24 h period the characteristics of PEPC change. Before sunrise
the activity is higher when measured at pH 7 than 8. With bright sunlight
the activity measured at pH 7 drops to 20% of its pre-sunrise value, the
activity only recovers gradually after malate disappearance and stays
constant throughout the night. When measured at pH 8, PEPC shows an
opposite behavior, i.e., activity increases in bright sunlight and
declines as the pH 7 activity increases. A day-night oscillation in the
capacity of malate to stimulate or inhibit PEPC was found. During the day
malate inhibits about 90% of the PEPC activity at both pH 7 and 8. After
sunset there is a sudden decrease in this inhibition and, at pH 8, malate
stimulates the activity by 50%. At pH 7 the stimulation was less. Both
stomatal conductance and malate formation increased only when the relative
humidity at night rose to 80%. Changes in the properties of the PEPC
coincided with the exposure to bright sunlight and changes in leaf
temperature. The importance of these metabolic and environmental controls
on the regulation of CAM in the Mesembryanthemaceae is discussed.

L8 ANSWER 9 OF 9 NTIS COPYRIGHT 2010 NTIS on STN
AN 1983(18):05745 NTIS Order Number: DE83701753/XAB
TI Influence of the Nitrate Concentration and Source in the Incorporation
of exp 14 CO sub 2 by the RuBP-Carboxylase from Wheat (*Triticum*

Aestivum) and Maize (Zea Mays).
 AU Garcia Pineda, M. D.; Saez, R. M.; Gines Diaz, M. J.
 CS Junta de Energia Nuclear, Madrid (Spain). (014974000 3485000)
 NR DE83701753/XAB; JEN-525
 75p; 1982
 DT Report
 CY Spain
 LA Spanish
 NTE In Spanish.
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 Port Royal Road, Springfield, VA, 22161, USA.
 NTIS Prices: PC A04/MF A01
 OS GRA&I8326; I1400
 AB The effect of the concentration and source of nitrogen in the culture
 media has been studied regarding its influence in the activity
 of the RuBP-carboxylase from wheat and maize during the first
 month of development. Wheat and maize has been chosen as plants
 representative of two different types of CO sub 2 assimilation: C3 and
 C4 respectively. Plants have been grown in hydroponic media and under
 temperature, humidity and nutrient salts control. A negative
 effect of NH sub 4+ has been observed in the enzymatic activity of wheat
 seedlings, this effect being more remarkable as NH sub 4+ concentration
 increases and as long the time of treatment. In our experimental
 conditions the most favorable source of nitrogen has been NO sub 3 NH
 sub 4 . The specific activity of the enzyme from wheat is about four
 times higher than in maize, even it decreases with time. This decreasing
 has not been observed in maize, with the exception of total absence of
 nitrogen in the media. We have not seen significant differences between
 the two photoperiods which have been tested. Also no differences have
 been found in the enzyme activities at the different NO sub 3 NH sub 4
 concentrations assayed, and it seems that RuBP-carboxylase
 metabolism is only affected in the case of absolute stress. (Atomindex
 citation 14:731871)

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=> s 12 (3S) humidity
 L9 1 L2 (3S) HUMIDITY

=> d 19 bib ab

L9 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
 AN 1986:200170 BIOSIS
 DN PREV198681091470; BA81:91470
 TI OXYGEN CONSUMPTION OF AQUEOUS SUSPENSIONS OF WHEAT WHOLEMEAL BRAN AND GERM
 INVOLVEMENT OF LIPASE AND LIPOXYGENASE.
 AU GALLIARD T [Reprint author]
 CS RHM RESEARCH LTD, LORD RANK RESEARCH CENTRE, LINCOLN ROAD, HIGH WYCOMBE,
 BUCKS, HP12 3QR, UK
 SO Journal of Cereal Science, (1986) Vol. 4, No. 1, pp. 33-50.
 CODEN: JCSCDA. ISSN: 0733-5210.
 DT Article
 FS BA
 LA ENGLISH
 ED Entered STN: 28 May 1986
 Last Updated on STN: 28 May 1986
 AB The oxygen consumption values ($\mu\text{mol O}_2/10 \text{ min per g at } 25^\circ \text{ C}$)

of aqueous suspensions of wheat wholemeal (0.1-3.0), bran (1-18) and germ (1-11) are substantially higher than those of white flours (0.01-0.03). The actual values depend upon storage history; the O₂ consumption value of materials stored 2-4 weeks at 20° C, 65% r.h. are many-fold higher than those of the same materials from freshly-milled grain. The O₂ consumption of mixtures of finely-ground (< 0.5 mm) bran and germ increases on storage more rapidly than that of bran or germ stored separately. The O₂ uptake is due primarily to oxidation of unesterified, polyunsaturated fatty acids, catalysed by lipoxygenase that is concentrated in the germ fraction. The increased O₂ demand of stored materials is due to higher levels of polyunsaturated fatty acids, released during storage, by hydrolysis of triacylglycerols, catalysed by a triacylglycerol hydrolase (lipase) that is concentrated in the bran fraction. The triacylglycerol-hydrolase activity of wheat germ is relatively low. Thus, O₂-uptake by aqueous suspensions of wholemeal flour can be explained in terms of the combined effects of the bran component, causing lipolysis during storage of wholemeal, and the germ component, catalysing the O₂-dependent peroxidation of polyunsaturated fatty acids when the wholemeal is added to water; both bran and germ components contribute triacylglycerols as the substrates for lipolysis.

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